

## WHAT IS CLAIMED IS:

1. A composition of matter selected from the group  
5 consisting of:

- 10 a) a substantially pure or recombinant A05F12 protein  
or peptide exhibiting at least about 85% sequence  
identity over a length of at least about 12 amino  
acids to SEQ ID NO: 2 or 4;
- b) a natural sequence A05F12 comprising SEQ ID NO: 2  
or 4;
- c) a fusion protein comprising A05F12 sequence;
- d) a substantially pure or recombinant A07C03 protein  
or peptide exhibiting at least about 85% sequence  
identity over a length of at least about 12 amino  
acids to SEQ ID NO: 6, 8, or 10;
- e) a natural sequence A07C03 comprising SEQ ID NO: 6,  
8, or 10;
- f) a fusion protein comprising A07C03 sequence;
- 20 g) a substantially pure or recombinant E02B02 protein  
or peptide exhibiting at least about 85% sequence  
identity over a length of at least about 12 amino  
acids to SEQ ID NO: 12;
- h) a natural sequence E02B02 comprising SEQ ID NO:  
25 12; and
- i) a fusion protein comprising E02B02 sequence.

2. A substantially pure or isolated protein  
comprising a segment exhibiting sequence identity to a  
30 corresponding portion of an:

- a) A05F12 of Claim 1, wherein:
- 35 i) said homology is at least about 90% identity  
and said portion is at least about 9 amino  
acids;
- ii) said homology is at least about 80% identity  
and said portion is at least about 17 amino  
acids; or

iii) said homology is at least about 70% identity and said portion is at least about 25 amino acids;

b) A07C03 of Claim 1, wherein:

i) said homology is at least about 90% identity and said portion is at least about 9 amino acids;

ii) said homology is at least about 80% identity and said portion is at least about 17 amino acids; or

iii) said homology is at least about 70% identity and said portion is at least about 25 amino acids; or

c) E02B02 of Claim 1, wherein:

i) said homology is at least about 90% identity and said portion is at least about 9 amino acids;

ii) said homology is at least about 80% identity and said portion is at least about 17 amino acids; or

iii) said homology is at least about 70% identity and said portion is at least about 25 amino acids.

3. The composition of matter of Claim 1, wherein said:

a) A05F12 comprises a mature sequence of Table 1;

b) A05F12 protein or peptide:

i) is from a warm blooded animal selected from a primate or rodent, such as a human or mouse;

ii) comprises at least one polypeptide segment of SEQ ID NO: 2 or 4;

iii) exhibits a plurality of portions exhibiting said identity;

iv) is a natural allelic variant of a primate or rodent A05F12;

v) has a length at least about 30 amino acids;

- vi) exhibits at least two non-overlapping epitopes which are specific for a primate or rodent A05F12;
- vii) exhibits a sequence identity at least about 90% over a length of at least about 20 amino acids to a primate or rodent A05F12;
- viii) has a molecular weight of at least 100 kD with natural glycosylation;
- ix) is a synthetic polypeptide;
- x) is attached to a solid substrate;
- xi) is conjugated to another chemical moiety;
- xii) is a 5-fold or less substitution from natural sequence; or
- xiii) is a deletion or insertion variant from a natural sequence;
- c) A07C03 comprises a mature sequence of Table 2;
- d) A07C03 protein or peptide:
- i) is from a warm blooded animal selected from a primate or rodent, such as a human or mouse;
- ii) comprises at least one polypeptide segment of SEQ ID NO: 8 or 10;
- iii) exhibits a plurality of portions exhibiting said identity;
- iv) is a natural allelic variant of a primate or rodent A07C03;
- v) has a length at least about 30 amino acids;
- vi) exhibits at least two non-overlapping epitopes which are specific for a primate or rodent A07C03;
- vii) exhibits a sequence identity at least about 90% over a length of at least about 20 amino acids to a primate or rodent A07C03;
- viii) has a molecular weight of at least 100 kD with natural glycosylation;
- ix) is a synthetic polypeptide;
- x) is attached to a solid substrate;
- xi) is conjugated to another chemical moiety;

- xii) is a 5-fold or less substitution from natural sequence; or
- xiii) is a deletion or insertion variant from a natural sequence;

e) E02B02 comprises a mature sequence of Table 3; or

f) E02B02 protein or peptide:

- i) is from a warm blooded animal selected from a primate, such as a human;
- ii) comprises at least one polypeptide segment of SEQ ID NO: 12;
- iii) exhibits a plurality of portions exhibiting said identity;
- iv) is a natural allelic variant of a primate E02B02;
- v) has a length at least about 30 amino acids;
- vi) exhibits at least two non-overlapping epitopes which are specific for a primate E02B02;
- vii) exhibits a sequence identity at least about 90% over a length of at least about 20 amino acids to a primate oE02B02;
- viii) has a molecular weight of at least 100 kD with natural glycosylation;
- ix) is a synthetic polypeptide;
- x) is attached to a solid substrate;
- xi) is conjugated to another chemical moiety;
- xii) is a 5-fold or less substitution from natural sequence; or
- xiii) is a deletion or insertion variant from a natural sequence.

4. A composition comprising:

- a) a sterile A05F12 protein or peptide of Claim 1;
- b) said A05F12 protein or peptide of Claim 1 and a carrier, wherein said carrier is:
  - i) an aqueous compound, including water, saline, and/or buffer; and/or

- ii) formulated for oral, rectal, nasal, topical, or parenteral administration;
- c) a sterile A07C03 protein or peptide of Claim 1;
- d) said A07C03 protein or peptide of Claim 1 and a carrier, wherein said carrier is:
- i) an aqueous compound, including water, saline, and/or buffer; and/or
- ii) formulated for oral, rectal, nasal, topical, or parenteral administration;
- e) a sterile E02B02 protein or peptide of Claim 1; or
- f) said E02B02 protein or peptide of Claim 1 and a carrier, wherein said carrier is:
- i) an aqueous compound, including water, saline, and/or buffer; and/or
- ii) formulated for oral, rectal, nasal, topical, or parenteral administration.

5.. The fusion protein of Claim 1, comprising:

- a) mature protein sequence of Table 1, 2, or 3;
- b) a detection or purification tag, including a FLAG, His6, or Ig sequence; or
- c) sequence of another receptor protein.

6. A kit comprising a protein or polypeptide of Claim 1, and:

- a) a compartment comprising said protein or polypeptide; and/or
- b) instructions for use or disposal of reagents in said kit.

7. A binding compound comprising an antigen binding site from an antibody, which specifically binds to a natural:

A) A05F12 protein of Claim 1, wherein:

- a) said protein is a primate or rodent protein;
- b) said binding compound is an Fv, Fab, or Fab2 fragment;

- c) said binding compound is conjugated to another chemical moiety; or
- d) said antibody:
- i) is raised against a peptide sequence of a mature polypeptide of Table 1;
  - ii) is raised against a mature primate or rodent A05F12;
  - iii) is raised to a purified human A05F12;
  - iv) is raised to a purified mouse A05F12;
  - v) is immunoselected;
  - vi) is a polyclonal antibody;
  - vii) binds to a denatured A05F12;
  - viii) exhibits a Kd to antigen of at least 30  $\mu$ M;
  - ix) is attached to a solid substrate, including a bead or plastic membrane;
  - x) is in a sterile composition; or
  - xi) is detectably labeled, including a radioactive or fluorescent label;

B) A07C03 protein of Claim 1, wherein:

- a) said protein is a primate or rodent protein;
- b) said binding compound is an Fv, Fab, or Fab2 fragment;
- c) said binding compound is conjugated to another chemical moiety; or
- d) said antibody:
  - i) is raised against a peptide sequence of a mature polypeptide of Table 2;
  - ii) is raised against a mature primate or rodent A07C03;
  - iii) is raised to a purified human A07C03;
  - iv) is raised to a purified mouse A07C03;
  - v) is immunoselected;
  - vi) is a polyclonal antibody;
  - vii) binds to a denatured A07C03;
  - viii) exhibits a Kd to antigen of at least 30  $\mu$ M;

- ix) is attached to a solid substrate,  
including a bead or plastic membrane;
- x) is in a sterile composition; or
- xi) is detectably labeled, including a  
radioactive or fluorescent label; or

C) E02B02 protein of Claim 1, wherein:

- a) said protein is a primate protein;
- b) said binding compound is an Fv, Fab, or Fab2  
fragment;
- c) said binding compound is conjugated to  
another chemical moiety; or
- d) said antibody:
  - i) is raised against a peptide sequence of  
a mature polypeptide of Table 3;
  - ii) is raised against a mature primate  
E02B02;
  - iii) is raised to a purified human E02B02;
  - iv) is immunoselected;
  - v) is a polyclonal antibody;
  - vi) binds to a denatured E02B02;
  - vii) exhibits a  $K_d$  to antigen of at least  
30  $\mu\text{M}$ ;
  - viii) is attached to a solid substrate,  
including a bead or plastic membrane;
  - ix) is in a sterile composition; or
  - x) is detectably labeled, including a  
radioactive or fluorescent label

8. A kit comprising said binding compound of Claim  
7, and:

- a) a compartment comprising said binding compound;  
and/or
- b) instructions for use or disposal of reagents in  
said kit.

9. The kit of Claim 8 capable of making a  
qualitative or quantitative analysis.

10. A composition comprising:

- a) a sterile binding compound of Claim 7; or
- b) said binding compound of Claim 7 and a carrier,  
wherein said carrier is:
  - i) an aqueous compound, including water, saline,  
and/or buffer; and/or
  - ii) formulated for oral, rectal, nasal, topical,  
or parenteral administration.

11. An isolated or recombinant nucleic acid encoding  
a protein or peptide or fusion protein of Claim 1, wherein:

- a) said A05F12 protein or peptide is from a mammal,  
including a primate or rodent;
- b) said nucleic acid:
  - i) encodes an antigenic peptide sequence of  
Table 1;
  - ii) encodes a plurality of antigenic peptide  
sequences of Table 1;
  - iii) exhibits at least about 80% identity to a  
natural cDNA encoding said segment;
  - iv) is an expression vector;
  - v) further comprises an origin of replication;
  - vi) is from a natural source;
  - vii) comprises a detectable label;
  - viii) comprises synthetic nucleotide sequence;
  - ix) is less than 6 kb, preferably less than 3  
kb;
  - x) is from a mammal, including a primate or  
rodent;
  - xi) comprises a natural full length coding  
sequence;
  - xii) is a hybridization probe for a gene  
encoding said A05F12; or
  - xiii) is a PCR primer, PCR product, or  
mutagenesis primer;



- 5 c) said A05C03 is from a mammal, including a primate  
or rodent;
- d) said nucleic acid:
- 10 i) encodes an antigenic peptide sequence of  
Table 2;
- ii) encodes a plurality of antigenic peptide  
sequences of Table 2;
- 15 iii) exhibits at least about 80% identity to a  
natural cDNA encoding said segment;
- iv) is an expression vector;
- v) further comprises an origin of replication;
- 20 vi) is from a natural source;
- vii) comprises a detectable label;
- viii) comprises synthetic nucleotide sequence;
- 25 ix) is less than 6 kb, preferably less than 3  
kb;
- x) is from a mammal, including a primate or  
rodent;
- xi) comprises a natural full length coding  
sequence;
- xii) is a hybridization probe for a gene  
encoding said A07C03; or
- xiii) is a PCR primer, PCR product, or  
mutagenesis primer;
- 30 e) said E02B02 is from a mammal, including a primate;  
or
- f) said nucleic acid:
- 35 i) encodes an antigenic peptide sequence of  
Table 3;
- ii) encodes a plurality of antigenic peptide  
sequences of Table 3;
- iii) exhibits at least about 80% identity to a  
natural cDNA encoding said segment;
- iv) is an expression vector;
- v) further comprises an origin of replication;
- vi) is from a natural source;
- vii) comprises a detectable label;

15. The kit of Claim 14 capable of making a qualitative or quantitative analysis.

16. A nucleic acid which:

- a) hybridizes under wash conditions of 30° C and less than 2M salt to SEQ ID NO: 1 or 3;
- b) exhibits at least about 85% identity over a stretch of at least about 30 nucleotides to a primate or rodent A05F12;
- c) hybridizes under wash conditions of 30° C and less than 2M salt to SEQ ID NO: 5, 7, or 9;
- d) exhibits at least about 85% identity over a stretch of at least about 30 nucleotides to a primate or rodent A07C03;
- e) hybridizes under wash conditions of 30° C and less than 2M salt to SEQ ID NO: 11; or
- b) exhibits at least about 85% identity over a stretch of at least about 30 nucleotides to a primate E02B02.

17. The nucleic acid of Claim 16, wherein:

- a) said wash conditions are at 45° C and/or 500 mM salt; or
- b) said identity is at least 90% and/or said stretch is at least 55 nucleotides.

18. The nucleic acid of Claim 17, wherein:

- a) said wash conditions are at 55° C and/or 150 mM salt; or
- b) said identity is at least 95% and/or said stretch is at least 75 nucleotides.

19. A method of modulating physiology or development of a cell or tissue culture cells comprising contacting said cell with:

- a) a binding composition of Claim 7, which binds to a primate or rodent A05F12;

